

APPS SHOP CLASSIFIED CARS JOBS HOMES  
SUBSCRIBER SERVICES LEGAL ADS ADVERTISE

LOGIN

  
78°  
FULL  
FORECAST

# Tampa Bay Times

 WINNER OF 12 PULITZER PRIZES



Today's  
Paper  
E-  
Newspaper  
Search

[Make us your home page](#) 09:48.AM, Monday, June 13th, 2016

HOME MY EDITION **NEWS** POLITICS SPORTS THINGS TO DO VIDEO OPINION FEATURES & MORE

BREAKING NEWS LIVE BLOG WEATHER OBITUARIES BUSINESS PINELLAS

MORE

# The sinister, secret history of a food that everybody loves

By Jeff Guo, Washington Post

Friday, June 10, 2016 1:32pm



2

When Christopher Columbus crossed the Atlantic in search of Pacific spices 500 years ago, it was a famous miscalculation. Columbus instead made landfall in the Caribbean among the Taíno, a peaceful people who lacked any peppercorn or nutmeg or mace — but who had mastered an equally important plant.

## RELATED NEWS/ARCHIVE

**'Everybody Loves Raymond' star Doris Roberts dies at 90**

2 Months Ago

**Judge wants U.S. to protect Trump associate's secret history**

3 Months Ago

**Today in history**

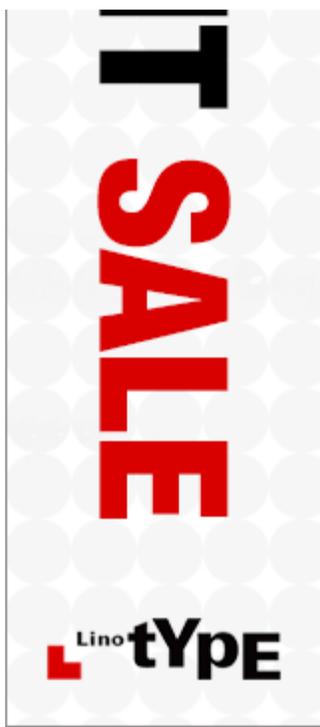
1 Month Ago



The Taíno mainly cultivated manioc, a starchy root vegetable much like the potato. Manioc, also known as cassava or yuca or tapioca, is a highly caloric staple that today feeds billions of people around the world. And the Taíno, also known as the Arawak, were experts at growing it.

By all accounts, the Taíno were prosperous — "a well-nourished population of over a million people," according to historian Jonathan Sauer. And yet the Spanish, who ultimately colonized and ravaged the people, considered them primitive. The Taíno were not organized in the type of complex, far-reaching, hierarchical social structure that is considered one of the hallmarks of civilization and was far more widespread in Europe and Asia.

Scholars have long puzzled over the different fates of the world's peoples. Why, on the eve of the modern world, were some societies so technologically and politically complex? For centuries, leading intellectuals from Adam Smith to Karl Marx believed that agricultural abundance had propelled the rise of advanced civilizations. The Assyrians and Babylonians of ancient Mesopotamia, for instance, flourished thanks to their fertile farms, which fed an upper class that devoted itself to religion and empire.



In his 1997 bestseller *Guns, Germs and Steel*, historian Jared Diamond argued that the availability of nutritious and easily domesticated plants and animals gave some societies a head start. In the Middle East there was barley and wheat; in Asia there was millet and rice. "People around the world who had access to the most productive crops became the most productive farmers," Diamond later said on his PBS show. And more productivity led to more advanced civilizations.

But the staple crops associated with less-advanced peoples — like manioc, the white potato, the sweet potato and taro — weren't necessarily less productive. In fact, manioc and the potato are superstar crops, less demanding of the soil and less thirsty for water. These plants still feed billions of people today.

Now, a provocative new study suggests the fates of societies hinged on a subtler problem with these plants. And if it's right, it could dramatically complicate the popular theory of the agriculture-driven dawn of civilization that has appeared in

textbooks for generations.

The study, published last year by economists in the United Kingdom and Israel doing novel work on archaeological and anthropological evidence, attempts to explain a strange pattern in agricultural practices. The most advanced civilizations all tended to cultivate grain crops, like wheat and barley and corn. Less advanced societies tended to rely on root crops like potatoes, taro and manioc.

It's not that grain crops were much easier to grow than tubers, or that they provided more food. Instead, the economists believe that grain crops transformed the politics of the societies that grew them, while tubers held them back.

Call it the curse of the potato.

The argument depends on the differences between how grains and tubers are grown. Crops like wheat are harvested once or twice a year, yielding piles of small, dry grains. These can be stored for long periods of time and are easily transported — or stolen.

Root crops, on the other hand, don't store well at all. They're heavy, full of water, and rot quickly once taken out of the ground. Yuca, for instance, grows year-round and in ancient times, people only dug it up right before it was eaten. It's hard for bandits to make off with your harvest when most of it is in the ground, instead of stockpiled in a granary somewhere.

The economists believe that societies cultivating crops like wheat and barley may have experienced extra pressure to protect their harvests, galvanizing the creation of warrior classes and the development of complex hierarchies and taxation schemes.

"Since the grain has to be harvested within a short period and then stored for use until the next harvest, a visiting tax collector could readily confiscate part of the stored produce," the authors write. In ancient China, for instance, the famously bureaucratic government depended on a seasonal tax on grain harvests.

Using an anthropological database, the economists gathered information about the political sophistication of societies before the 1500s. In ancient Africa, Asia and Europe, societies had access to a large catalog of different grains, including barley, sorghum, wheat and rice. They also had access to one root crop, the yam. And in the ancient Americas, societies had access to one kind of grain, corn, and three different kinds of root crops — white potatoes, sweet potatoes and cassava.

There is a clear correlation between crop choice and political complexity. Societies that grew grain tended to have more hierarchical political systems — empires, even — like the rice- and wheat-cultivating kingdoms of ancient India. Tuber crops were associated with smaller, more local political units.

In many places, grains do not feed more people, acre for acre, than tubers. Potatoes, in particular, are an amazingly nutritious plant. The choice between cultivating cereals and tubers, where it existed, depended on local growing conditions. Societies tend to grow crops that yield the most calories. In some places, that meant potatoes. In other places, that meant wheat.

When the economists examined that agricultural data, they found that more fertile regions did not necessarily yield more complex societies. The crucial factor wasn't the amount of food that a society could produce; it was the type of food they chose as their main crop — grain or tuber.

"The results are just amazing," says the University of Warwick's Omer Moav, who wrote the paper along with Luigi Pascali, also of the University of Warwick; Joram Mayshar of Hebrew University; and Zvika Neeman of Tel Aviv University. "It's not the absolute productivity of land; it's the productivity of cereals (grains) relative to tubers."

Does the theory make sense?

Consider, for a second, what that means. In Jared Diamond's version of events, certain regions were cursed because they were less efficient at growing food. Low productivity leads to low agricultural surpluses leads to less complex societies. According to the economists' data, the productivity of the land didn't matter. The curse was in the type of crop.

"It's an extremely original attempt to come to grips with a very old question: Why in some places we have the emergence of hierarchies — peasants and priests and nobles and so on," says Joel Mokyr, a professor of economics at Northwestern who teaches the paper in his economic history classes. "They use economic analysis to point out something which I think is basically correct — that it's very important what kind of crop you're growing, that it affects the kinds of political institutions that develop."

Some anthropologists and archaeologists have had mixed reactions to the argument, which they believe downplays the human element. They're skeptical that plants could fully explain why some civilizations

prospered and others stalled.

"For the last 50 years, archaeologists have been investigating the origins of inequality and the rise of the state and I do not know any archaeologists who will buy the idea that cereal agriculture was behind it," Joyce Marcus, co-author of *The Creation of Inequality* and a professor of archaeology at the University of Michigan, wrote in an email. "Inequality (a hallmark of complex society) results from social and political processes, and is not an agricultural process."

Many anthropologists now believe that societies took up farming not out of necessity but for cultural reasons — to please a king or to satisfy their religion. Historians once believed that people were forced into farming because of overpopulation, but evidence shows that the hunter-gatherer lifestyle was more than enough to satisfy people's needs.

Bone records show the earliest farmers were shorter and sicker than their hunter-gathering peers. It appears that early farming was much more miserable than foraging. So why did people do it?

It's possible that everybody is partly right. Societies may naturally tend toward complexity, but the presence of easily stolen staples like grains might have accelerated that process in some regions of the world.

If there's truth in this theory, it would represent a tremendous irony. The potato may have been a curse in antiquity, but it has become a blessing in modern times.

A famous paper by Nancy Qian, an associate professor of economics at Yale, and Nathan Nunn, an economist at Harvard, argues that the white potato revolutionized agriculture in Europe after being brought over from the Americas. It dramatically increased the amount of food that people could grow, particularly in places unsuitable for grain agriculture. Between 1700 and 1900, the world population nearly tripled; Qian and Nunn give the potato a large chunk of the credit.

"According to our most conservative estimates, the introduction of the potato accounts for approximately one-quarter of the growth in Old World population and urbanization between 1700 and 1900," the economists write.

Today, the potato is one of the world's most important crops. The USDA estimates that Americans consume about 126 pounds of potatoes a year. And where would civilization be without the french fry?

© 2016 Washington Post

The sinister, secret history of a food that everybody loves 06/10/16 [Last modified: Friday, June 10, 2016 5:15pm]

[Photo reprints](#) | [Article reprints](#)

© 2016 Tampa Bay Times

